

CHAPTER III

RESEARCH METHOD

A. Research Method

1. Research Design

In this study, the researcher uses an experimental with the form of quasi experimental design, the researcher used because in fact difficult to get the control group used for research.¹ According to Nunan, Experiments are carried out in order to explore the strength of relationships between variables.² In this type of research, the researcher divides the sample into different groups and the compared the groups by using variables.³ In experimental studies the researcher uses treatment, while in a naturalistic study without treatment. So the experimental research method can be interpreted as the research methods used to find a specific treatment effect against the other under controlled conditions.⁴

¹ Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*, (Bandung: Alfabeta, 2016) p. 77

² David Nunan, *Research Methods in Language Learning*, (Cambridge: Press Syndivate of the University of Cambridge, 1992), p. 24.

³ Timothy C Urdan, *Statistic in Plain English*, (New York: Taylor And Francis Group, 2010), p.4.

⁴ Sugiyono, *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitas, dan R&D* (Bandung: I K A P I, 2016), p. 6.

This study also uses pre-test and post-test. Pretest posttest control group experimental design could be described as follows:⁵

E	$0_1 - 0_2$
C	$0_3 - 0_4$

Where:

E = experimental group

C = control group

0_1 = pre-test for experimental group

0_2 = post-test for experimental group

0_3 = pre-test for control group

0_4 = post-test for control group

B. Place and Time of Research

1. Subject and place of the research

This research was conducted in MTs Sunan Muria Pati. The subject of this study were the VIII grade students of MTs Sunan Muria Pati in academic year of 2016. This study was conducted in the second semester.

2. Time of the research

The research conducted from November 14th to December 4th 2016, and the proposal was submitted until the end of the research.

⁵ Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik*, (Jakarta: Rineka Cipta, 2006), p.86

3. Procedures of the research

In collecting data, there were some procedures of the research, those steps were:

a. Preliminary visit (meet the administration officer)

The researcher visited the madrasah to get information about teacher and students as participants. To gain the information, the researcher asked the administration officer.

b. Contacting the headmaster

The researcher asked the permission to the headmaster of MTs Sunan Muria Pati by giving the permission letter.

c. Contacting the English teacher

After receiving the permission from the headmaster of the school, the researcher met the English teacher and ask for the data of the students, and ask guidance for the researcher explained about the test and material that will be given to the students.

d. Conducted try out test

In the section, the researcher gave the try out test to the IX grade of the research subjects. The researcher gave the assignment of descriptive text based on the paper. The students had to work at 30 questions in 45 minutes.

- e. Conducted the pre test

In this section, the researcher gave the pre test to experimental and control class. The researcher gave the assignment of descriptive text based on the paper. The students had to work at 15 questions in 30 minutes.

- f. Conducted the treatment

In this section, the researcher gives new treatment for experimental class received a new treatment using ST (Snowball Throwing) method in the teaching reading descriptive text, but control group did not get the treatment in the teaching reading descriptive text.

- g. Conducted the post test

In this section, the researcher gave the post test to measure the improvement of students' understanding on reading of descriptive text. The students had to work at 15 question in 30 minutes.

Table 3.1

The Schedule of the Researcher

No	Task	What to prepare	Date
1	Preliminary visit (met the administration officer	Letter or Pre-research.	Monday, September 21, 2015.
2	Contact the headmaster	Letter of research.	Monday, November 14, 2016.
3	Contact the English teacher	-	Tuesday, November 15,

No	Task	What to prepare	Date
4	Give the pre-test	Pre-test worksheet.	2016. <i>Control Class:</i> November 16, 2016. <i>Experimental Class:</i>
5	Give the treatment	Lesson plan, handout, worksheet, teaching materials.	November 18, 2016 <i>Control Class:</i> November 19, 2016. November 21, 2016 <i>Experimental Class:</i> November 14, 2016 December 5, 2016
6	Give the post-test	Post-test worksheet	<i>Control Class:</i> Desember 2, 2016. <i>Experimental Class:</i> December 3, 2016

C. Population, Sample and Sampling Technique

Population was all of the subjects of the research.⁶ The population of this research was the eighth grade students of MTs

⁶ Arikunto, Suharsimi, *Prosedur Penelitian Suatu Pendekatan Praktek*, Jakarta: Rineka Cipta, 2010, p. 130.

Sunan Muria in the academic year of 2015/2016. The total number of population was eighty two students which were divided into three classes.

Table 3.2
List of the Population

No	Class	Number
1	VIII A	28
2	VIII B	27
3	VIII C	27
Total		82

Sample was part of total and characteristics which was had by population which was chosen as source of data.⁷ It was called sample research when we wanted to generalize the sample research result.⁸ The researchers could use the sample that taken from the population in the class VIIIA as control group and VIIC as experimental group. Therefore a sample that taken from the population should be truly representative.

The quality of research is not only determined by the appropriateness of the methodology and the instrumentation but also by the suitability of the sampling strategy that has been adopted.⁹ Technique sampling is a sampling technique to

⁷ Sugiyono, *Metode Penelitian Kuantitatif Kualitatif dan R&D*, (Bandung: CV. ALFABETA, 2008), P.81.

⁸ Arikunto, *Prosedur Peraktik Penelitian Suatu Pendekatan Praktik*, p. 131.

⁹ Lous Cohen et.al, *Research Methods in education*, (London: Routledge Falmer, 2000), p.92

determine the sample to be used in research. Sample means apart of characteristic had by population that will be observed.¹⁰

Sampling is a technique to take a sample.¹¹ In this study, the writer used cluster random sampling technique. Finally, chosen class VIII A as the experiment class that consist of 24 students and class VIII C as the control class that consist of 24 students. The researcher just using 24 students because some students in the activity other in the class.

D. Variable and Indicators of Research

Variable is a variation object of the study. Variable is the object of research or something that become the concern of research. There are two types of variables: dependent variable and independent variable. The dependent variable is the variable of focus or the central variable on which other variables will act if there is any relationship. The independent variable is selected by researcher to determine the relationship with the dependent variable.¹² So, the variables in this study are:

¹⁰ Sugiyono, *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitas, dan R&D...* p. 81.

¹¹ Sugiyono, *Metode Penelitian Pendidikan, Pendekatan Kuantitatif, Kualitatif, R & D, ...*p.118.

¹² Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik...*P. 118-119.

1. Independent variable (X) is an input variable, that which causes, in part or in total, a particular outcome, it is stimulus that influences response, and antecedent or a factor which may be modified to affect an outcome.¹³ It is a variable that influences or causes of change or emergence of the dependent variable. The independent variable in this research was the use of snowball throwing to teach descriptive text in reading comprehension.
2. Dependent variable (Y) is the outcome variable that which is caused in total or in a part by the input, antecedent variable. It is the effect, consequence of or response to an independent variable.¹⁴ It is variable that is influenced by independent variable. The dependent variable in this research was the improvement of eighth grade students' reading comprehension of MTs Sunan Muria Gunungwungkal, Pati.

Based on the variables above, we can make indicators that support the variables. The schema of indicators variables are stated as follows:

¹³ Louis Cohen, Lawrence Manion and Keith Mornson, *Research Method in Education*, (New York: Routledge, 2007) 6th Ed., p. 504

¹⁴ Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik*...P. 237.

Table 3.3
Variable and Indicators

Variable	Indicators
<p>1. (Independent Variable) The use of Snowball Throwing</p>	<ol style="list-style-type: none"> 1. Teacher Divided students into some groups. 2. Teacher called each leader group 3. Teacher explained the material to leader group in front of class. 4. The leader group came back and explains in the each group. 5. Students discuss and prepare some papers and pens.
<p>2. (Dependent Variable) Students' achievement in the reading comprehension in descriptive texts.</p>	
Sub-Variable	Indicators
<p>a. Students' ability in understanding descriptive text.</p>	<ol style="list-style-type: none"> 1. Explaining social function of descriptive text. 2. Explaining the generic structure in descriptive text. 3. Explaining language feature of descriptive text.
<p>b. Students' ability in reading comprehension on descriptive text.</p>	<ol style="list-style-type: none"> 1. Students do the exercise about reading comprehension on descriptive text in worksheet.

E. Technique of Data Collection

1. Documentation

The documentation method was to look for the data concerning matters or the variable that took the form of the note, transcript, book, newspaper, magazine, inscription, agenda, etc.¹⁵ The researcher used documentation to collect some student information, such as: student name list and their English score. In this study, documentation used to support the data about the students' condition reflect on their activity in the class.

2. Test

Test is a set question used to measure the achievement or capability of individual class. The purpose of a test are several, for example to diagnose a students' strengths, weakness and difficulties, to measure achievement, to measure aptitude and potential, to identify readiness for a program. In this Research, test was given to try-out class, control class and experiment class. Tests were used to measure students' reading comprehension skill and were administered twice; namely, the pre-test and post-test.

1) Try Out Test

¹⁵ Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktek...* p. 237

Before doing the test, student did try out test first. A good evaluation of our test could help us to measure student reading comprehension more accurately. Before administering the real test (pre-posttest) researcher would try ass the quality test.

2) Pre-test

Before the teacher explains new material by using Snowball Throwing, the teacher would given a test to the students. Pre-test would be given before the experimental group and the control group in the same way. This test would be given before the experiment session.

3) Post-test

Post-test would be given to the experimental class and the control class. Post-test would be given in order to know the increasing of students' ability in reading comprehension on descriptive text. Post-test would be given to both of class after receiving.

F. Technique of Data Analysis

The writer analyzes the data through giving test to the students it needs some steps in analyzing of the data. The following are the steps had been taken by the writer.

1. Try-out Instrument of the Test

a. Validity of Test

The validity is an important quality of any test. It is a condition in which a test can measure what is supposed to be measured. According to Arikunto, “a test is valid if it measures what it purpose to be measured”.¹⁶ The validity of an item can be known by doing item analysis. It is counted using product – moment correlation formula:

$$r_{xy} = \frac{N\Sigma XY - \Sigma(X) \Sigma(Y)}{\sqrt{\{N\Sigma X^2 - (\Sigma X)^2\}\{N\Sigma Y^2 - (\Sigma Y)^2\}}}$$

Notice:

r_{xy} : The correlation coefficient between X variable and Y variable

N : The number of students

ΣX : The sum of score of X item

ΣY : The sum of score of Y item

b. Reliability

A reliable test score would be consistent of different characteristics of the testing situation. It means that it could be believed. Besides having high validity, a

¹⁶ Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktek*...p. 65.

good test should have high reability too. Alpha formula was used to know reability of test is K-R. 20.¹⁷

$$r_{11} = \left(\frac{k}{k-1} \right) \left(\frac{S^2 S - \sum PQ}{S^2} \right)$$

Notice:

r_{11} : The reability coefficient of items

K : The number of item in the test

P : The proportion of students who give the right answer

Q : The proportion of students who give the right answer

S^2 : The deviation standard of the test

c. Degree of test difficulty

A good question is a question that not really difficult and not really easy. Index difficulty formula:¹⁸

$$P = \frac{B}{JS}$$

Notice:

P : Difficulty's index

B : Number of students who have right answer

JS : Number of students

The criteria were:

¹⁷ Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktek...*p. 187.

¹⁸ Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktek...*p. 208.

Bigness of DD	Interpretation
Less of 0,25	Difficult question
0,25 – 0,75	Medium question
More than 0,75	Easy question

d. Discriminating power

The discriminating power was a measure of the effectiveness of a whole test. It was used to know how accurate the question differs higher subject and lower subject. The formula for discriminating power was:

$$D = \frac{BA}{JA} - \frac{BB}{JB}$$

Notice:

- D : Discriminating index
- JA : members of students in upper group
- JB : member of students in low group
- BA : members of students in upper group who answer the item correctly
- BB : members of students in low group who answer the item correctly

The criteria were:

Bigness of DP	interpretation
Less of 0,20	Poor
0,21 – 0, 40	Satisfactory
0,41 – 0,70	Good
0,71 – 100	Excellent
Negative sign	Thrown item

2. Pre test

a. Normality

It was used to know the normality of the data that was going to be analyzed whether both groups had normal distribution or not. Chi square are used here:¹⁹

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

Notice:

χ^2 : chi square

O_i : frequency from observation

E_i : expected frequency

b. Homogeneity

It was used to know whether experimental group and control group, that were decided, came from population that had relatively same variant or not. The formula was:²⁰

$$F \frac{Vb}{Vk}$$

Notice:

Vb : bigger varian

Vk : smaller varian

c. Testing the similarity of average of the initial Data between Experimental and Control Classes.

¹⁹ Sudjana, *Metode Statistik*, (Bandung: Tarsito, 2002), p.273

²⁰ Subjana, *Metode Statistik...*, p. 250

Proposed hypothetical test in average similarity with the right test is as follows:

Ho : $\mu_1 = \mu_2$

Ha : $\mu_1 > \mu_2$

μ_1 : average data of experiment group

μ_2 : average data of control group

The t-test formula is used.

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \quad \text{With } S = \sqrt{\frac{(n_1-1)S_1^2 + (n_2-1)S_2^2}{n_1 + n_2 - 2}}$$

Notice:

\bar{x}_1 : average of experimental group

\bar{x}_2 : average of control group

n_1 : number of experiment group

n_2 : number of control group

S_1^2 : standart deviation of experimental group

S_2^2 : standart deviation of control group

Testing criteria that apply Ho is accepted if $t_{\text{count}} > t_{\text{table}}$ with determinate $df = (n_1 + n_2 - 2)$ and significant $\alpha = 5\%$ ($1 - \alpha$)

3. Post test

Posttest was held after all treatments were conducted. This test was used to measure students' achievement after they given treatments. The result of test was analyzed statistically. Post test not using normality test and

homogeneity test because the score in the posttest has been inconclusive because they do the teaching material in advance.

Proposed hypothesis test in average difference with the right test is as follows:

$$H_0 : \mu_1 \leq \mu_2$$

$$H_a : \mu_1 > \mu_2$$

μ_1 : average data of experiment group

μ_2 : average data of control group

The formula that is used in the t-test as follows:²¹

$$t = \frac{\bar{x}_1 - \bar{x}_2}{S \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \text{ With } S = \sqrt{\frac{(\sum x_1 - n_1 \bar{x}_1)^2 + (\sum x_2 - n_2 \bar{x}_2)^2}{n_1 + n_2 - 2}}$$

Notice :

\bar{x}_1 : average of experimental group

\bar{x}_2 : avarege of control group

n_1 : the number of experimental group

n_2 : the number of control group

S : standart deviation

S² : variance

Criteria test is H_0 is accepted if $t_{\text{count}} > t_{\text{table}}$ with determinate $df = (n_1 + n_2 - 2)$ and the significant $\alpha = 5\%$ ($1 - \alpha$).

²¹ Subjana, *Metode Statistik...*, p. 239